



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

COAL-MINING IN ATCHISON COUNTY.

By E. B. KNERR, Atchison, Kan.

Read (by title) before the Academy, at Manhattan, November 28, 1903.

SINCE the discovery in 1893 of the sixteen-inch vein of coal about a mile and a half south of Atchison, a report of which is given in volume XIV of this Academy's Transactions, that vein has been worked to some extent almost every winter, though mostly in a small way. One quite elaborate effort, however, at putting this coal on the market was made by Mr. W. T. F. Donald, of Atchison, for four years, from 1894 to 1898. In that time Mr. Donald removed about twenty-three acres of the coal stratum from his mine, in an area of a square about 1000 feet on a side, and amounting to nearly 50,000 tons.

To work the vein, an electric plant was installed, at an expense of \$12,000. Boilers, engines, tracks, etc., raised the item of expense for equipment to \$15,000. The coal first entered the market at \$2.50 per ton delivered, but as its excellent quality became known to the public, the price gradually rose to \$4 per ton.

The difficulties of mining this coal by machinery are such, however, that after four years of experimenting, attended by considerable financial loss, Mr. Donald abandoned the enterprise. The method employed was the "long-wall" system, and the machine used was a toothed wheel about five feet in diameter, which was made to revolve in a horizontal position by a sprocket chain, and undercut the seam of coal to a depth of two and a half feet. The machine was propelled by an electric motor, and was run along the face of the exposed vein, making a daily undercut sometimes of 100 feet or more. During the night the coal would break down of its own weight, frequently in continuous lengths of twenty or thirty feet, when it required only to be broken up and hauled from the mine the next day. However the "horses" and faults encountered were so numerous as to occasion much dead-work and delay the progress of profitable mining; but the coal found a ready market, and was all disposed of in Atchison and Doniphan counties.

At the present time a new colony of four laboring men are at work opening up a new entry in the property immediately north of Mr. Donald's land. Indeed, the lay of the vein is so advantageous that men of but little experience can readily handle it, and nearly every winter parties of such men work it in a small way. They wagon the

coal to Atchison or sell it to the farmers, getting about four dollars per ton for it.

But the coal-mining enterprise which is now commanding most attention at Atchison is that of the Atchison Coal Mining Company, which is sinking a shaft to the three-foot vein discovered by prospect drilling in October, 1900. This shaft is now down to a depth of about a thousand feet, and has only about 130 feet yet to go till the coal is reached. The work of sinking progressed rapidly and smoothly until the bed of sandstone at about 900 feet was reached, when there was such a greatly increased flow of water as to necessitate suspension of operations until air-compressors and pumps could be installed. These are being put in at the present time, and when they are in service it is hoped that the work of sinking will be pushed to completion in a few weeks.

The waterflow at present is about 70,000 gallons in twenty-four hours, which under continuous lifting reduces to 40,000 gallons, but after each shot the flow is increased again.

The engines, machinery and equipment are all of the very best type. The shaft is sixteen by eight feet, and is timbered into two compartments by four-by-twelve-inch curbing, laid flat. The derrick, or tower, is seventy feet high, and is provided with two sheave wheels around which the inch-and-a-quarter steel cables pass from the ten-foot drum in the engine-house to the two cages of the shaft, carrying one up as the other descends.

This shaft and equipment have cost the company to date about \$70,000, including recent expenditures for pumps and air-compressor. All the work is of a permanent order; for even if the three-foot vein for any reason should prove unworkable, it is the purpose to back up, and work the Leavenworth vein, which at the shaft was found to measure fully twenty-three inches.